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TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

October 20, 2011

TO: Internal File

THRU: Daron Haddock, Coal Program Manager *DH*

FROM: Steve Christensen, Environmental Scientist *SC*

RE: Hydrographs, Canyon Fuel Company, LLC, Dugout Canyon Mine, #C0070039 and Task ID #3929

SUMMARY:

On September 29th, 2011, the Division of Oil, Gas and Mining received an amendment to the Dugout Canyon Mining and Reclamation Plan (MRP). Canyon Fuel Company, LLC (the Permittee) submitted hydrologic data for review and incorporation into the MRP. The hydrologic data was required based upon approved language within the MRP beginning on page 7-42.

Upon review of the submitted hydrologic data, the Permittee has satisfied the requirements of the approved water monitoring plan. The revised changes to chapter 7 and the submitted data are hereby approved and should be incorporated into the MRP.

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TECHNICAL ANALYSIS:

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Ground and Surface Water Monitoring

The amendment meets the Ground and Surface Water Monitoring requirements of the State of Utah R645-Coal Mining Rules.

Specific water monitoring protocols are presented in Tables 4 and 5 for ground and surface water respectively. For both ground and surface water, the MRP outlines a requirement to obtain additional baseline data during wet or dry years for the mine area based on the Natural Resources Conservation Services snow-pack measurements for the Price River-San Rafael River Basin.

As defined by the MRP, "*a wet year occurs when the snow pack water content is greater than 110% of normal and a dry year when the snow pack is less than 70% of normal*". The hydrologic data presented in the amendment is the result of data collection during the first wet year following the issuance of the permit. The first dry year measurements were obtained in 2002. Baseflow hydrographs comparing the wet and dry year measurements were submitted as Appendix 7-13 to the MRP.

Water samples were obtained during high- and low-flow seasons in addition to the required quarterly samples. The samples were analyzed in accordance with Tables 7-4 and 7-5. Analyses from the dry year data collection have been submitted to the UDOGM database for the 2002 dry year. The Permittee has provided the wet year data for incorporation into the UDOGM database.

Findings:

The amendment meets the Ground and Surface Water Monitoring Requirements of the State of Utah R645-Coal Mining Rules. The Permittee has complied with the baseline water monitoring requirements as described in the approved MRP.

RECOMMENDATIONS:

The amendment should be approved at this time.

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